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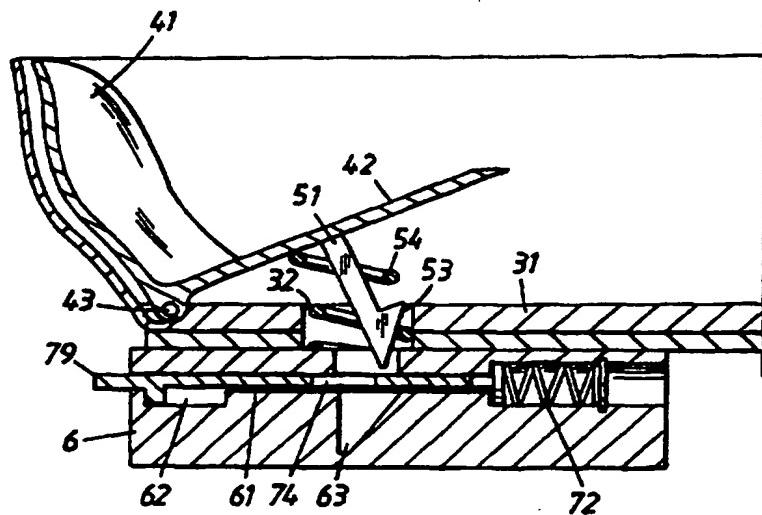
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(54) Title: FOOT GUIDE MECHANISM FOR A SHOE



(57) Abstract

A foot guide mechanism for a shoe (1) has a sole (3) and an upper part (2) that has a flexible portion (22, 23) which surrounds the heel part of the foot. A first tongue (41), which normally rests on the inner sole (31) of the shoe in the shoe heel part, is pivotally journaled at its rear part about a horizontal shaft (43) which extends essentially at right angles to the longitudinal axis (11) of the shoe. A second tongue (42) is carried by and flexurally rigidly connected to the rear end of the first tongue (41) and extends upwards along the inside of the heel part (23) of the upper part (2). Spring devices (32, 72) are provided for biasing the first tongue (41) in a direction towards raising the tongue from the inner sole (32). A latching means (5, 6, 7) is provided for latching the first tongue (41) in a position in which the tongue lies against the inner sole (32). The mechanism also includes release means (79) which function to cause the latching means (5, 6, 7) to release the first tongue (41) when actuated.

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## FOOT GUIDE MECHANISM FOR A SHOE

The present invention relates to foot guiding mechanism for a shoe of the kind defined in the preamble of Claim 1.

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It is well known that difficulties may be encountered in putting on and/or taking off so-called slip-on shoes or like shoe, such as loafers, that lack a lace-up facility or the like. Conversely, shoe into which a foot can be easily 10 inserted or withdrawn is normally too large and therefore troublesome to wear.

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The problem can be solved in many cases with the aid of a shoe horn. However, a shoe horn is not always readily on-hand. When the shoe concerned is a boot, it may be difficult 15 to use a shoe horn even when a shoe horn is available.

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Accordingly, an object of the present invention is to provide a foot guide mechanism for shoe that alleviates the aforesaid problems.

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The inventive mechanism finds use in shoe that, as a rule, has a heel, a sole and an upper part having a portion which surrounds the heel of the foot.

The object of the present invention is achieved with a mechanism according to Claim 1.

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Further embodiments of the inventive mechanism are set forth in the dependent Claims.

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The invention is based on a mantle that receives the rear side of the heel and the plantar surface of the foot. The mantle is journaled for pivotal movement about a pivot shaft that lies in the plane of the inner sole of the shoe and at right angles to the longitudinal direction thereof. A

latching mechanism holds the mantle in a position in which an upper tongue of the mechanism lies in the plane of the shoe. A latch releasing mechanism is accessible from outside the shoe, for instance on the rear part of the heel thereof, this mechanism functioning to release the latch so that the mantle can be lifted rearwardly and upwardly. The mantle can be raised rearwardly and upwardly by virtue of the flexibility of the upper part of the shoe (the upper leather).

10 The mantle is conveniently biased towards a raised position by means of a spring.

The release mechanism may, for instance, be operated with the toe of the other foot/shoe.

15 The present invention enables the shoe to have an effective length that is well adapted to the size of the foot, so that the shoe can be worn comfortably. Because the mantle can be raised, the geometrical conditions are considerably improved  
20 with regard to putting-on and taking-off a shoe or boot.

The invention will now be described in more detail with reference to an exemplifying embodiment thereof and also with reference to the accompanying drawing.

25 Fig. 1 illustrates schematically from above a shoe fitted with an inventive mechanism.

30 Fig. 2 is a sectional view taken on the line II-II in Fig. 1 and shows the mechanism in one working position.

Fig. 3 is a sectional view corresponding to Fig. 2 but shows the mechanism in a second working state.

35 Fig. 4 illustrates a shoe corresponding to Fig. 1 but with the mechanism release device located in another position.

Fig. 1 illustrates a so-called loafer 1 that includes an upper part 2 and a sole 3, wherein said upper part includes a front upper portion 21 which is assumed to be flexible and which can be preferably curved elastically to some extent. That portion 23 of the upper part 22 which surrounds the heel is supported by an upstanding tongue or mantle 41 which, in turn, is joined to a generally horizontal tongue 42 that normally lies against the inner sole of the shoe so as to support the heel plantar. It will be seen from Fig. 2 that the mantle 4 formed by the tongues 41 and 42 can be pivoted about a shaft 43 that lies in the region of the junction between the tongues 41, 42 and extends horizontally and perpendicularly to the longitudinal axis 11, the pivot shaft 43 being shown to lie furthest back in the shoe 1. However, the pivot shaft may be placed more forwardly, provided that a recess is found beneath the rear part of the tongue 42 so that the mantle can be swung up. The pivot shaft 43 may have the form of a shaft bearing or may comprise a flexible connection (tongue) between mantle and shoe.

A releasable latching mechanism 5, 8, 7 is adapted to fold the mantle 4 normally in the position shown in Fig. 2. When the latching mechanism is triggered, the mantle 4 is able to take the position shown in Fig. 3.

The latching mechanism includes a latch hook 51 which extends down from the tongue 42 through an aperture 63 through the sole and the heel 6. The hook has a wedge surface 53 and a hooking surface 52. When moving downwards, the latch hook is able to pass through an opening 74 in a latch plate 73 that extends generally horizontally through a passageway 61 in the heel 6. The latch plate 73 is biased in a rearward direction by a spring 72 accommodated in a space 71 in the heel 6. The plate 73 has at its rear end a manoeuvring button 79 that projects out from the side edge surface of the heel 6. The

plate 73 has a laterally and outwardly extending projection 76 which is received in a recess 62 in the passageway 61 so as to define the axial freedom of movement of the plate 73. When pressing-in the button 79, the plate opening 74 is forced into alignment with the latch hook 51-53 so that the latch hook is able to pass through the opening 74.

A spring 54 is mounted generally axially with the latch hook 51-53 in a recess 32 in the sole and functions to bias the mantle 4 to the raised position shown in Fig. 3.

When the wearer of the shoe in which the mechanism is in the operational state illustrated in Figs. 1 and 2 wishes to take-off the shoe, he/she is able to depress the button 79 with his/her left foot or left shoe so as to enable the latch hook 51-53 to move up through the opening 74 in the latch plate 73 and to enable the latch hook to be relieved of the tongue 42, whereby the mantle falls anti-clockwise in Fig. 2 and the tongue 41 moves rearwardly, so as to enable the foot to be drawn easily backwards and upwards out of the shoe. The mechanism remains in the state illustrated in Fig. 3 subsequent to having removed the foot from the shoe, therewith facilitating insertion of the foot into the shoe at a later time, owing to the fact that the foot insertion opening of the shoe will then have a greater length than when the shoe is in use, as shown in Fig. 2.

Although Figs. 1-3 show the latch release button 79 lying on the longitudinal centre line 11 of the shoe, it will be obvious to the skilled person that the direction of movement of the latch plate 73 need not coincide with the longitudinal axis 11 of the shoe. Instead, the latch plate 73 can be arranged to move at an oblique angle to the longitudinal axis 11, so that the actuator button 79 of the rectilinearly moving plate 73 will be placed in the heel junction region between the inner long side of the shoe and the rear end

thereof, where the button 79 can be reached more easily with the toe of the other shoe (or of the foot).

5 The invention finds use with all types of shoe or other footwear with which it is not desired to widen the foot insertion passage in the narrowest part of the shoe or with which such widening can be achieved. The invention also finds use in boots.

## CLAIMS

1. A foot guiding mechanism for a shoe (1) having a sole (3) and an upper part (2) that includes a flexible portion (22, 23) which surrounds the heel part of the foot, characterized by a first tongue (41) which normally rests on the inner sole (31) of the shoe at the heel part thereof and which is pivotally mounted at its rear part on a horizontal pivot (43) the axis of which extends generally at right angles to the longitudinal axis (11) of the shoe; a second tongue (41) which is carried by and flexurally rigidly connected to the first tongue (42) at its rear end and extends upwards along the inside of the heel part (23) of said upper part (2); spring means (54) adapted to bias the first tongue (42) in a direction towards raising the first tongue away from the inner sole (31); a latch means (5, 8, 7) which functions to latch the first tongue (42) in the position in which it lies against the inner sole (31); and a latch release means (79) which functions to release the first tongue (42) in response to actuation of the latch means (5, 8, 7).

2. A mechanism according to Claim 1, characterized in that the release means (79) is accessible on an exposed edge part 25 of the heel (6) of the shoe (1).

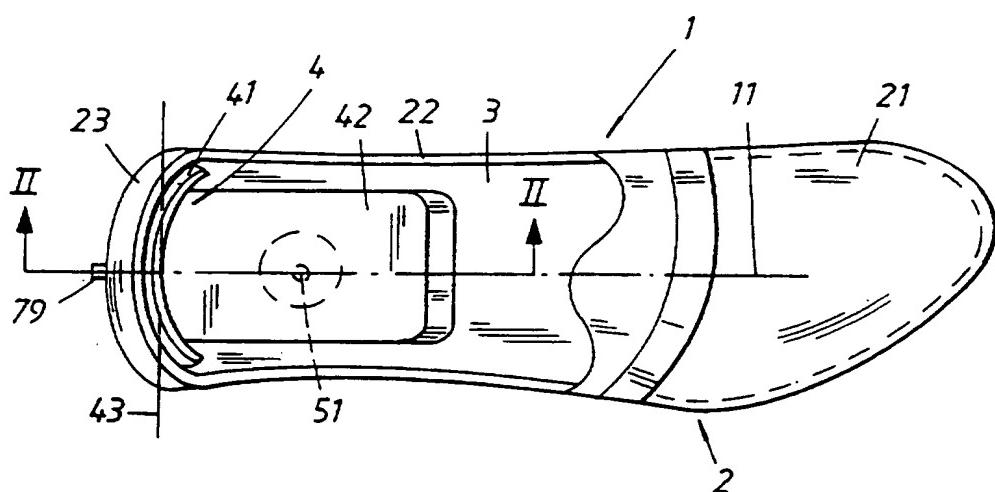
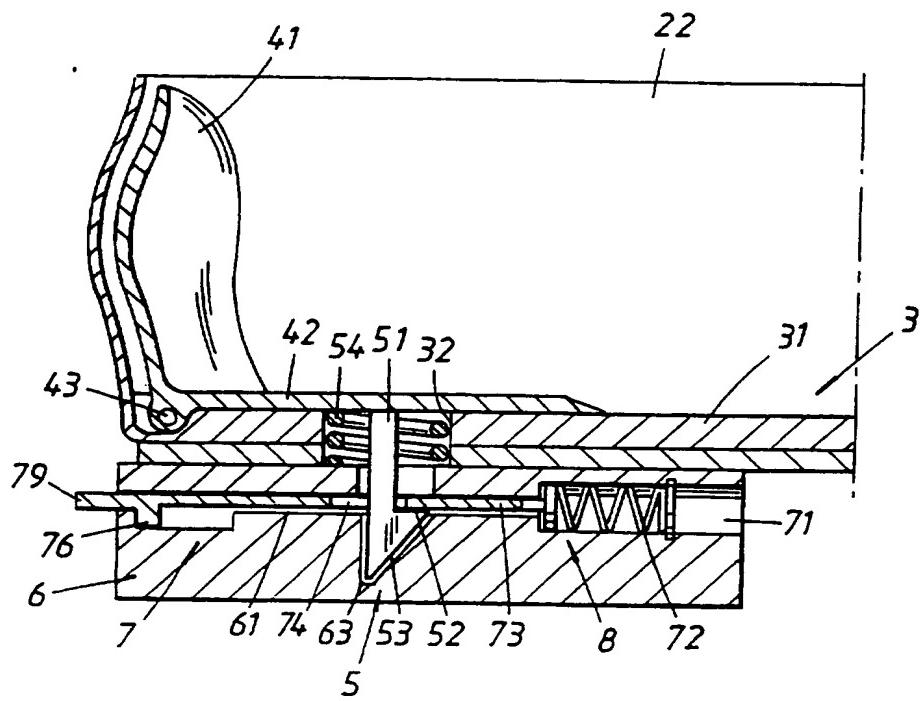
3. A mechanism according to Claim 1 or 2, characterized in that the release means (79) is located in the junction region between the rear end of the heel and the long edge of the 30 heel along the inner long side of the shoe.

4. A mechanism according to any one of Claims 1-3, characterized in that the latch means includes a latch pin (51) which extends down into an aperture (32, 53) and which 35 has an undercut (52) that forms a latching surface for coaction with a linearly movable latch plate (73) that has an

end-part (79) that forms the accessible end of the release means; in that the latch plate has an opening (74) through which the latch pin can pass; and in that the mechanism includes a spring device (72) that biases the release plate 5 (4) towards a position in which the edges defining said opening (74) coact with the latch surface (52) of the pin (52).

5. A mechanism according to Claim 4, characterized in that  
10 the latching head of the pin (52) has a wedge surface (53) that coacts with the edge of the opening (74) in the latch plate (73) such as to move the latch plate (73) towards its biasing spring (72) when the first tongue (42) is lowered against the sole (3).

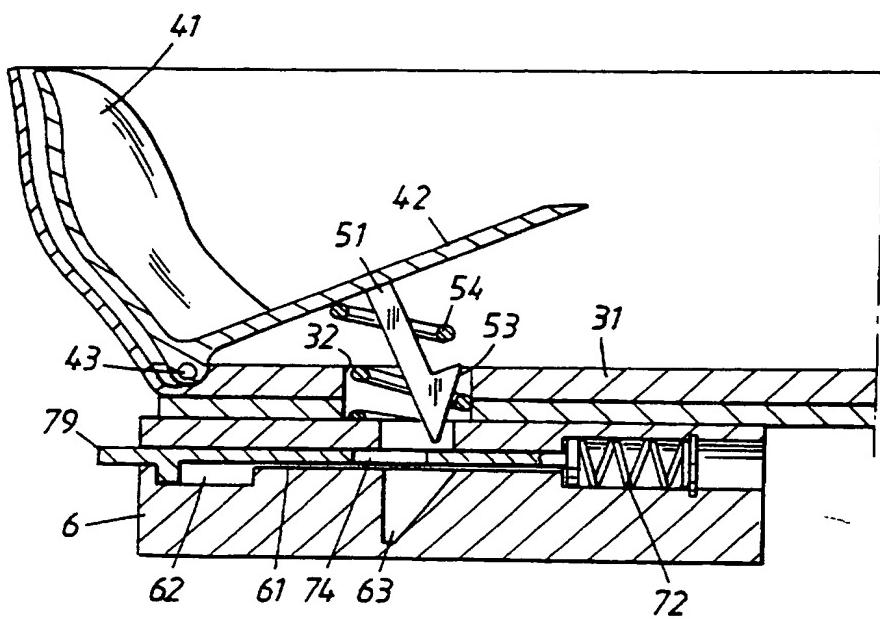
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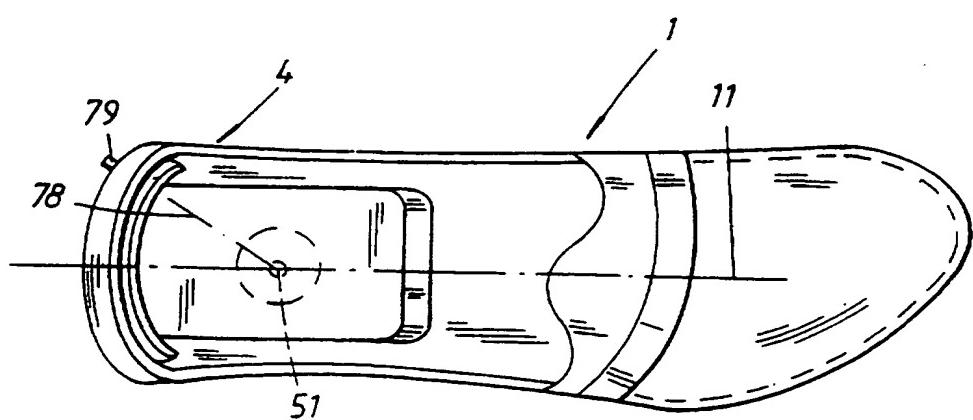
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F-29-4



## INTERNATIONAL SEARCH REPORT

1

International application No.  
PCT/SE 97/00457

## A. CLASSIFICATION OF SUBJECT MATTER

IPC6: A43B 11/00 // A43B 11/12, A43B 3/26  
According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC6: A43B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE, DK, FI, NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 9203943 A1 (MURANYL, MARTIN), 19 March 1992 (19.03.92), page 5, line 11 - page 7, line 10, figure 1, pos. 26,28,30,34,38,42,44,46,48  --	1-5
X	US 5282327 A (OGLE), 1 February 1994 (01.02.94), column 2, line 29 - line 56, figures 1,2, pos. 14,16,18,20  -----	1-3

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Name and mailing address of the ISA/ Swedish Patent Office Box 5055, S-102 42 STOCKHOLM Facsimile No. +46 8 666 02 86	Authorized officer  Sune Söderling Telephone No. +46 8 782 25 00

**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 9203943 A1	19/03/92	AU 8419091 A DE 4107376 A DE 59103833 D EP 0548116 A,B	30/03/92 12/03/92 00/00/00 30/06/93
US 5282327 A	01/02/94	NONE	

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**International application No.**

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WO 9203943 A1	19/03/92	AU 8419091 A DE 4107376 A DE 59103833 D EP 0548116 A,B	30/03/92 12/03/92 00/00/00 30/06/93
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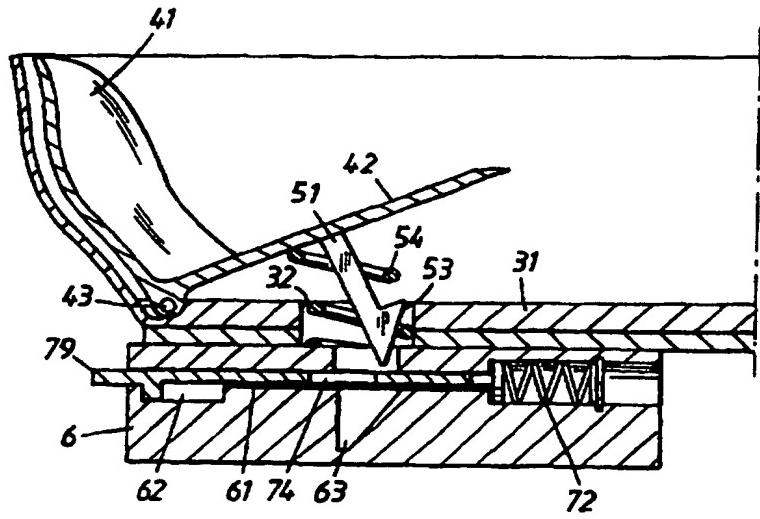
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(21) International Application Number: <b>PCT/SE97/00457</b> (22) International Filing Date: <b>19 March 1997 (19.03.97)</b>		(81) Designated States: CA, JP, NO, US, European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).
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(71)(72) Applicant and Inventor: AHLSTRÖM, Dan [SE/SE]; Duvholmsgränd 34, S-127 41 Skärholmen (SE). (74) Agents: SUNDSTRÖM, Per et al.; Stenhamn Patentbyrå AB, P.O. Box 4630, S-116 91 Stockholm (SE).		(88) Date of publication of the revised version of the international search report: <b>24 December 1997 (24.12.97)</b>

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